ship all or most of the way back to the farmer. In some cases integration has proceeded to the point where legal title to goods may pass only in the sale by the producer to the processor and the sale by the processor to the consumer. Within the integrated concern, however, a process closely akin to ownership transfer occurs if products are separately accounted for as they pass from, say, a purchasing division to a processing division and then to product sales divisions. And each division may be as zealous in championing its "price" and quality in intracompany transfers as it would be in selling or buying in the open market.

The efficiency with which buying and selling are carried on is of concern to buyers and sellers and to society. Methods of purchase and sale that are expensive in terms of time and effort mean loss of production and income to individuals and society. The methods which result in prices that do not accurately reflect underlying conditions of demand and supply can lead to unwarranted differences in prices among both individual producers and producing areas. This means loss of satisfaction to consumers and a waste of resources by producers, as the latter do not receive from the price system the proper guides to the allocation of resources.

The persistence of wide variations in methods of transfer of ownership suggests that there is no one best method suited to all conditions. The method actually used may be even less important from the standpoints of economy and efficiency than is the extent to which both buyers and sellers have knowledge of the market conditions.

It is not so much a matter of whether buying and selling takes place in local markets, wholesale markets, direct to retailers or consumers, through cooperatives, or through the utilization of specialized buying and selling agencies. Rather it is the knowledge of demand, supply, and prices possessed by buyers and sellers and the extent to which grading and standardization enable buyers and sellers to know what is being bought and sold.

The closer such knowledge comes to perfection, the more quickly buyers and sellers come to terms and the more satisfactory are pricing results. (*Bennett S. White, W. Edwards Beach.*)

The Danger of Loss

Risk in the commercial sense commonly means the danger of loss arising from the uncertainty of future developments.

Risks are an important element in agricultural marketing. They have direct effects on marketing agencies. They affect farmers and consumers alike through increased marketing costs and affect early-season prices of many commodities because they restrict the accumulation of inventories.

Under primitive conditions, each family carried its own risks of inadequate food, clothing, and other things. Under modern specialized production, the risks of farm production are taken over by the farmers, and the risks of marketing are assumed by marketing agencies.

Risks of marketing appeared when the first few farm products were purchased for resale. They increased in each commodity market as the distances between the producers and consumers became greater, commercial processing grew, and inventories expanded.

MANY KINDS of risks are incurred in the marketing of farm products. The principal kinds, by major groups, are:

Destruction or deterioration of prop-

erty (principally products handled): Fire; flood; storm; earthquake; wreck (ship, train, truck); insects, rodents, birds, et cetera; disease, rot, mold; excessive heat or cold.

Personal risks: Illness, injury, or death of owner or manager, or a partner; illness, injury, or death of associates or employees.

Risk of dishonesty: Theft (burglary, robbery); embezzlement, et cetera; breach of contract; manipulation of prices; failure of others to pay debts.

Business risks: Changes in value of money; liability for injury or damage; variations in the production of commodities handled; variations in production of competing commodities; political interference; any technological changes; shifts in demand; war; inadequate supplies; loss of customers; intensified competition; delays.

Price risks: Declines in prices of property owned (principally products handled); advances in prices of property contracted for delivery.

THE STORY of marketing hazards is that of a race between development of new marketing conditions in expanding markets and efforts to control the sharp practices of a few dealers or processors. For example, when berries came to be consigned to distant commission merchants, there was more need for legislation and for trade-association efforts to set forth the minimum responsibilities of commission merchants and give protection to shippers than there had been when most growers were close at hand. Obviously, legal safeguards may reduce such hazards but cannot eliminate them entirely, just as funds are embezzled from time to time despite the punishment of embezzlers.

The risk of inadequate supplies may be vital to a company that depends on continued business. Adequate supplies of essential ingredients are important to a company that has developed a brand and has devoted considerable energy and money to getting that product accepted by a body of consumers. For example, a mill will pay substantial premiums for high-protein wheat when it is scarce in order to maintain the quality of its flour brands.

THE EXTENT of risks varies among farm products.

Proportionate risks might seem to be greatest among highly perishable commodities, such as melons and berries. That is not so. Risks there are far from unimportant, but deterioration has been reduced by improved techniques of handling and prompt movement of products to consumers. Florida oranges, for example, usually are in the hands of consumers within 2 weeks after picking. Furthermore, prices are kept closely adjusted to what the consumer will pay.

Greater aggregate marketing risks actually occur in the less perishable commodities because they are accumulated by marketing agencies for comparatively long periods. Accumulation is the building up of inventories by dealers and processors during the periods when farm marketings are seasonally in excess of the consumers' requirements and the subsequent withdrawals from inventories. Seasonal production and the demand thus are adjusted.

Consumers play a much smaller part than formerly in carrying food forward from harvest. Sixty years ago most families of substance laid in a season's supply of flour in the fall. Now many buy bread every day or two. Then each family filled a bin with potatoes in the fall. Now most families buy potatoes in small amounts.

The trend toward less home storage of food is offset only partly by the use of lockers and home-freezers by some families. Lack of storage space in apartments and industrial housing, the larger proportion of married women who work for wages and have less time to prepare food, and a generally higher standard of living contribute to greater reliance of consumers on the accumulations of dealers and processors.

Many farmers also have a smaller part in carrying their products forward. Often they want to sell their crops at harvest. In wheat, for example, the use of combines cuts down the time required in harvesting, the use of trucks permits the wheat to be hauled to market without rehandling, and the combined wheat frequently needs more postharvest conditioning than most farmers can provide advantageously. Generally similar conditions are found in many other commodities. The trend is offset only partly by the actions of some farmers in placing their crops, unsold, in commercial warehouses.

Dealers and processors accumulate large inventories of annual crops, such as cotton and wheat. The other important accumulations may include canned, frozen, and dried fruits and vegetables, refrigerated and frozen eggs, and frozen orange concentrate. For the commodities in the latter group the accumulations make the commodities available to consumers over longer periods. For all commodities accumulated, the accumulations regulate the rate of movement into consuming channels.

THREE MAIN CHARACTERISTICS of accumulations affect marketing risks.

First, in contrast to the short periods that perishable commodities commonly are owned in marketing, most accumulations are owned by dealers or processors for an average of several months or more. Stocks of such commodities as cotton or tobacco frequently are owned longer. The longer the period of ownership, the greater the possibility of a decline in price. The inventory also is exposed longer to other risks, including destruction or deterioration, during its ownership.

Second, risks commonly are highly concentrated in the accumulating agency. Frequently a dealer or processor may have a peak accumulation equal to the quantities produced by several hundred or, indeed, several thousand farmers, with the result that his risks may be large in proportion to his working capital. Only a comparatively small proportion of the dealers or processors of each commodity accumulate inventories, largely because most of them lack the necessary capital or are not in a position to assume the risks.

Third, prices of the inventory must be estimated largely in advance and are arrived at on the basis of incomplete information. Each dealer or processor accumulating an inventory generally estimates in advance about how much he will buy and the maximum price that he can pay, taking into account the quantities that he expects to sell and the prices that he hopes to get. He can revise his estimates from time to time during the period of accumulation, but ordinarily his peak inventory occurs early in the season while only partial information is available.

Accordingly, the prices at which the inventory is purchased may be either higher or lower than they would have been if full information had been available for their determination.

Hope of advances in price during the period of ownership doubtless is a factor in accumulations, but business reasons often cause accumulations considerably in excess of the quantities that would be held for a price advance.

AN EXAMPLE is the crushing of soybeans in 1948–1949. Production had increased rapidly during the Second World War and afterward, and ways of handling risks had not kept pace with the production, largely because the Government had assumed most of the risks of marketing during the war.

Suppose that a typical crusher of medium size expected to crush a million bushels in 1948–1949. He might have a plant valued at about 750,000 dollars, mortgaged for 375,000 dollars, and have working capital of about 600,000 dollars. Since most farmers sold their beans after harvest and he could buy only relatively small quantities later in the season, he might have to accumulate an inventory of

about 500,000 bushels by the end of harvest. At 2.50 dollars a bushel, that would amount to about 1,250,000 dollars; he would have to borrow about 700,000 dollars if he put in 550,000 dollars of his working capital.

In such circumstances his risks were great. Doubtlessly he covered all risks like fire by insurance, as far as he could, but he could not obtain insurance against his very large price risks. Soybean prices at Illinois country points actually declined 37 cents a bushel from November 1948 to February 1949. If that decline had been suffered by the crusher on his peak inventory, the loss would have been about 185,000 dollars—or more than 30 percent of his working capital.

Crushers of soybeans accordingly were anxious to reduce their price risks. Most of such reduction they did by means of forward sales of oil and meal: About 70 percent of the oil and 60 percent of the meal in Illinois were sold for forward delivery; the greatest forward sales were early in the season. In November 1948, sales were made for delivery as much as 9 months in advance.

Largely to reduce their risks, crushers made substantial price concessions on their distant forward sales. The average discounts in November 1947 and 1948 for delivery in the following months through June were (in percentages of November prices) for oil: 2.7, 5.7, 7.5, 13.4, 13.8, 15.4, and 16.3. For meal they were 1.8, 4.7, 8.5, 10.4, 12.4, 13.0, and 13.7.

The proportions of oil and of meal sold at the various discounts are not available, but the discounts show clearly that crushers were anxious to reduce their price risks.

Such large discounts represented an extreme condition and could not continue long. Other methods of handling the risks were brought into use, and the discounts were reduced sharply, being quite small in 1952–1953. The large discounts, however, indicate some of the possible effects of accumulation on the marketing risks of a commodity, especially upon the price risks.

Of 28 farm products showing farm marketings of more than 100 million dollars in 1951, only fresh oranges and cattle and calves did not exhibit significant accumulations. Some, including tobacco and cotton, showed large accumulations in commercial channels (but farmers and ranchers themselves do on occasion hold back large numbers of cattle and calves which would normally have moved to market). There was practically no accumulation of fluid milk and ice cream, but there was a moderate accumulation of most manufactured dairy products and of fluid cream. In perishable fresh fruits and vegetables there was no accumulation, but processed products of many had substantial accumulations.

Because most farm products have moderate degrees of accumulation, it is reasonable to conclude that price risks constitute the most important risks in farm marketing, even though we cannot measure them precisely.

Risks increase the cost of marketing farm products directly by the amount of the premiums paid for insurance and indirectly by tending to restrict competition in marketing.

Risks, particularly those of loss of capital, frequently deter persons from engaging in the marketing of a given commodity. Risks keep down the operations of many marketing agencies. Otherwise increased competition would cause smaller margins of profit.

What proportion of the total cost of marketing farm products is represented by risks?

Only a general estimate can be attempted on the basis of the scanty information available. Insurance premiums paid by several hundred cooperative marketing associations of various kinds in recent years averaged between 4 and 5 percent of their operating expenses. Comparable data are not available for private companies, but some observers suggest that

4 or 5 percent may be typical. Those proportions are higher than were indicated by some data in 1925; it seems that more insurance is carried now.

Price risks and other noninsurable risks incurred in agricultural marketing are considered to be substantially greater, on the whole, than those that are covered by insurance. If the insurance premiums average 4.5 percent of the cost of marketing of all farm products, the total risks may average more than 10 percent.

GOVERNMENT PRICE SUPPORTS change the pattern of marketing risks and tend to reduce such risks when prices are at or below support levels. Their effects upon price risks are mainly indirect. With the exception of a few commodities in which prices are supported by purchase programs, marketing agencies that have purchased farm products outright cannot obtain Government loans or other price supports.

Availability of loans and the other assistance to farmers tends to reduce the after-harvest pressure of a crop upon the market and reduce the peak accumulation. The need for large inventories is less if substantial quantities are held by farmers under loans, because an advance above the support level will be followed by liberal farm offerings. Accumulations may be purchased at higher prices, but the existence of the support level cuts down the danger of a decline below that level later in the season.

The situation is somewhat different in years when prices are well above the support level. Then the supports have little effect upon marketing risks except that they may limit a possible drop in prices.

RISKS of agricultural marketing may be handled in five main ways under private enterprise. They may be covered by insurance, reduced through increased information, reduced by combining marketing units, "transferred" to others, or assumed by the marketing agencies.

Many risks incurred in marketing farm products are covered by insurance of various kinds. Such risks are principally those in which the losses can be predicted at least with a moderate degree of accuracy, so that appropriate premiums can be determined.

Risks may be reduced by obtaining additional information concerning the conditions which give rise to the risks, thus reducing the uncertainty. In some instances this research needs to be followed by action to change the conditions.

Some hazards may be reduced by legislation restraining misbehavior or providing additional safeguards among certain marketing agencies, principally those entrusted with commodities or funds.

Risks in interstate shipments of fruits and vegetables have been cut down by the Produce Agency Act, which makes it illegal for a commission merchant to fail to account for or to dump or destroy without good reason the produce consigned to him. The Perishable Agricultural Commodities Act penalizes breach of contract by receivers. The Commodity Exchange Act provides that the commission merchants operating under it shall not commingle customers' funds with their own but shall place customers' funds in segregated accounts to protect the customers' funds if the commission house fails. Several laws provide for licensing and for minimum financial responsibility among marketing agencies entrusted with the property of others.

Risks arising from the uncertainties of the future, including the risks of price changes, have proved harder to reduce than most others, but material progress has been made, both in supplying accurate market information, and in reducing price fluctuations through purchases and crop loans. The work in prices has consisted largely of relating data of supply and demand to prices of a given commodity over a period of time.

Further work of this sort, making use of refined techniques and more detailed data, is needed. The analysis should be expanded to include the actual practices of price determination and the influence of market psychology.

RISKS may be reduced also by combining small business units that perform the same types of services. A large unit can handle many risks to better advantage than a small one.

For example, a lettuce shipper who ships a car a day to 10 markets incurs smaller risks than the aggregate risks of 10 shippers who each ship 1 car a day. The larger shipper is less likely to find all his markets temporarily oversupplied or to have a large part of his funds tied up by a wreck of all 10 cars. The 10-car shipper likewise can adjust more readily to daily variations in the quantities harvested by his growers. Accordingly, risks may be reduced by combining small units that give the same services.

Greater advantages result from the combination of business units that render successive marketing service, such as wholesaling and retailing. This vertical integration lessens both the risk of losing customers and of inadequate supplies and, if the quantity handled is the same, it ordinarily reduces the ratio of risks to financial resources. The advantage of vertical integration in risk handling is further increased if the concentration of price risks before integration was great in one of the units, perhaps because of accumulation, but smaller in the other. The concentration is reduced by the combination of the two units.

Price risks and some other risks may be "transferred" to others by means of forward contracts or by hedging on organized futures markets. The word "transferred" is used here in a limited sense to indicate that while the risks may pass from one person to others the aggregate of the risk to the others on any commodity, ordinarily is not the same as it was to the first person.

For example, a processor of frozen eggs may contract in April with a baker for frozen egg whites for future delivery. The processor may be anxious to reduce his inventory risks; the baker may feel that his assumption of the price risks is a small matter, perhaps overbalanced by the risk of his inability to obtain high-quality frozen egg whites later in the season.

Such "transfers" are used most frequently to reduce burdensome inventory risks.

Forward contracts may shade into unorganized trading in futures, which under favorable conditions may ripen into organized trading in futures. As forward contracts in a given commodity are made in increasing volume, season after season, both the contracts and the commodities deliverable on them tend to become standardized. It becomes easier to find someone to take the other side of the contract. A little later the contracts may begin to pass from hand to hand, and persons from outside the industry may enter the trading. The danger of breach of contract, however, increases because, as contracts become more common, particularly when they pass from hand to hand, it is more difficult to restrict them to responsible persons. Hence organized exchanges with trading rules and scrutiny of responsibility of members.

HEDGING as a means of handling price risks is practiced widely in the commodities having organized futures markets.

Here is an oversimplified illustration of a hedge against an inventory. A midwestern grain merchant who has 500,000 dollars may decide at the opening of the wheat season to accumulate 1,000,000 bushels of wheat for merchandising during the crop year. At 2.50 dollars a bushel the inventory would have a value of 2,500,000 dollars. He would have to borrow at least 2,000,000 dollars, or 80 percent of the value of the inventory; his banker would insist that the wheat be hedged.

He hedges by contracting to sell in the futures market (in units of 5,000 bushels) quantities equal to his daily purchases of wheat. When he has accumulated the million bushels of wheat, he also has contracts to sell that quantity in the futures market. To the extent that the futures market and the cash market move in unison, any loss resulting from a decline in the price of his actual wheat, excluding commission charges, will be offset by the profit obtained by closing out his futures position at lower prices. As he merchandises his wheat, he closes out his futures position.

As a hedge against price advances, a flour mill having no wheat may sell a baker the flour equivalent of 200,000 bushels of wheat to be ground from a specified blend of wheat. Since the price of wheat may advance before the mill can find its requirements, it may contract to buy 200,000 bushels on the futures market. Then the mill can shop for the wheat required, closing out its futures position as it purchases the actual wheat.

While hedging usually provides protection against heavy losses, the protection is not automatic, and the hedger must remain alert to market changes. Small profits and losses incidental to hedging are common, because cash prices and futures prices seldom move exactly in unison. Occasionally cash and futures prices may diverge sharply and may reduce the protection ordinarily afforded by hedging.

Advantages of hedging include the convenience, speed, and economy of placing hedges and the guarantee of the exchanges that the contracts will be fulfilled. Prices of the contracts, also, are arrived at publicly under carefully worked out trading procedures. Disadvantages connected with the futures markets arise mainly from imperfections of those markets, such as the conditions that permit occasional manipulation of prices and from the inferior judgment of some of the speculators.

The most widely known forms of manipulation are the "corners" and "squeezes," which occasionally may cause sharp price changes, principally in expiring futures. They occur less frequently than in earlier years.

Perhaps the market judgment of many of the numerous speculators who predominate on the buying side in a number of important futures markets is unlikely to be as good as that of experienced dealers and processors who prefer to avoid or shift their risks by hedging.

FURTHER IMPROVEMENT in handling risks is needed to increase marketing efficiency and open the way to additional economies. Substantial improvements have been effected in dealing with the marketing risks of most farm products, as indicated previously, and in the reduction of social hazards by legislation. Available evidence indicates, however, that additional improvement is possible.

The use of organized methods for handling risks contributed to reductions in the marketing margins for refrigerated butter and eggs during the 1930's. Before that period, when hedging was uncommon, sizable speculative profits in most years were expected by dealers. Toward the end of the period, when hedging was general, dealers complained that speculative profits had been sharply reduced.

Other factors, including less seasonality in egg production, also contributed to the reduction in marketing margins, but it was evident that hedging had an important part. Incomplete information points to a similar reduction in the marketing margins for grain in an earlier period.

Other information indicates improvement in handling risks in various commodities, largely as a result of gains in skill in dealing with risks by individual marketing agencies. Collective action required to institute organized methods of handling risks tends to occur less rapidly. The desire to avoid losses in individual agencies impels the persons responsible to strive to become proficient in dealing with

marketing risks; in setting up organized methods of handling risks, considerable inertia may have to be overcome. Some persons may not comprehend fully how the changes will help them; some groups may enjoy an advantage and may oppose change. For example, the development of organized trading in butter and egg futures at Chicago was actively opposed by a minority, including some brokers who were losing business to organized trading.

A systematic study of marketing risks and their handling in a representative group of farm products is needed to disclose how further improvements in dealing with risks can best be effected in individual products. The study should be designed to bring out not only the current methods of handling risks in the commodities included in it, but also the effects which improvements in risk handling have had upon other functions, such as processing, in the development of commodity markets. By pointing the way to better risk handling in specific farm products the information obtained by the study would promote increased efficiency and lower costs in marketing. (*H. S. Irwin.*)

Forward Selling

Forward selling means any selling in which the seller puts off for a time some part of his obligations to deliver, to transfer title, or to perform other specified duties. It forms a large proportion of today's business transactions.

It is accomplished by agreements, which usually are binding contracts.

Futures trading is the same as a great variety of other forward dealing, except that it is conducted through elaborate special trading arrangements that were explained in the preceding chapter.

The story of the development of forward selling, including futures trading, is a story of the evolution of contracts. Interwoven with it is the historical development of the institutions of private ownership of property rights, money, debt, banking, and, in fact, the whole institutional organization of credit and business today.

Before the sixteenth century, only landlords and a few wealthy people could own property and make contracts that the courts would enforce. Slaves, serfs, peddlers, and the like had few rights of citizenship and were dependent on such special privileges as were granted and enforced by feudal lords and kings. Little buying and selling were done, and that mostly at fairs or local markets.

The importance of peddlers and merchants grew in the succeeding decades as trade expanded in the yeast of many economic, political, and legal events, increased efficiency in production, evolution of property rights, and ideas regarding individual freedom. They gradually acquired rights as citizens and influence as a class.

Originally their trading had been mostly direct exchange of one commodity for another or for money. But as commerce expanded, more and more business was conducted on the basis of promises to deliver goods or make payment at a later time. In settling among themselves disputes that arose over such transactions, the merchants developed customs that came to be recognized by the courts and thus to be part of the common law.

In the process, the institution of legally enforceable contracts was established by the latter part of the sixteenth century. Since then, any party to a contract has rights of legal action to require the fulfillment of the